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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/516,955	12/06/2004	Bernd Gromoll	1454.1586	8626

21171 7590 10/17/2007  
STAAS & HALSEY LLP  
SUITE 700  
1201 NEW YORK AVENUE, N.W.  
WASHINGTON, DC 20005

EXAMINER
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SCHEUERMANN, DAVID W

ART UNIT	PAPER NUMBER
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2834

MAIL DATE	DELIVERY MODE
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10/17/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/516,955	GROMOLL ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	David W. Scheuermann	2834	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 August 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                             | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other:  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments filed 8/9/2007 have been fully considered but they are not persuasive in view of the new grounds of rejection. Note that Philofsky, US 3271600 shows connectors 53 at each end of half coil 16. Thus, this limitation fails to define over the previous art rejection.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 12-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Philofsky, US 3271600 in view of Dustmann, US 4578962. Philofsky, US 3271600 discloses:

An electrical machine comprising

A rotor rotatably mounted; (inherent)

A stator associated with said rotor in a stationary position<sup>10</sup>, and

A cooling device, cooling at least parts of said stator, including (inherent)

[A refrigeration unit comprising at least one cold head having at least one cold surface; and

A closed line system (note lines 14 and 17 of figure 1 of Dustmann, US 4578962) containing:

**A coolant supply line and a coolant line at axial ends of the stator winding (this feature is shown in Philofsky, US 3271600, note connectors 53 at each end of half coil 16)**

A coolant, thermally coupled to the cold surface (22, Dustmann, US 4578962), and

Said line system, thermally coupling said cold head to the parts of said Stator to be cooled, having discrete coolant areas associated with the parts of said stator to be

Cooled,

Wherein the heat generating parts of said stator are located at a geodetic lower level than the cold surface (see figure 1, Dustmann, US 4578962) and in which a coolant is circulated by a thermosiphon effect, the coolant being heated or at least [partially vaporized] in the discrete coolant areas.]

Philofsky, US 3271600 does not expressly disclose the bracketed material.

Dustmann, US 4578962 teaches using a thermosiphon to circulate cooling fluid for a for the inherent purpose of eliminating the need for a mechanical pump. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to

Art Unit: 2834

replace circulation pump 55 of Philofsky, US 3271600 with a thermosiphon system of Dustmann, US 4578962. One of ordinary skill in the art would have been motivated to do this so that no separate pump is needed.

Furthermore, Dustmann, US 4578962 teaches using a refrigeration unit with its inherent cold head to cool an electric machine, for the inherent purpose of allowing the machine to operate at its maximum load. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a refrigeration unit with a cold head in to cool cooling fluid of the device of Philofsky, US 3271600. One of ordinary skill in the art would have been motivated to do this to enhance the cooling effect.

Finally, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a vaporizable coolant as taught by Dustmann, US 4578962, see column 3, lines 5-15. One of ordinary skill in the art would have been motivated to do this to enhance the cooling effect. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to use a two-phase coolant in the device of the combination of Philofsky, US 3271600. One of ordinary skill in the art would have been motivated to do this the take advantage of the large heat capacity of the latent heat of vaporization of the cooling fluid to more effectively cool the stator.

Re claim 12, note cold head 22 of Dustmann, US 4578962.

Re claims 13-19 note that the half coils 16 for cooling channels, which traverse the axial length of the core and are coupled to every lamination of core 10.

Re claim 20, note radial vent ducts 14.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David W. Scheuermann whose telephone number is 571-272-2035. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached at (571) 272-2044. The fax phone numbers for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2834

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



dws  
October 12, 2007



KARL TAMAI  
PRIMARY EXAMINER